

Name: \_\_\_\_\_

### at1118paper: Complete the Square (v413)

#### Example

By completing the square, find both solutions to the given equation:

$$x^2 - 30x = -209$$

Add  $\left(\frac{-30}{2}\right)^2$ , which equals 225, to both sides of the equation.

$$x^2 - 30x + 225 = 16$$

Factor the left side.

$$(x - 15)^2 = 16$$

Undo the squaring. We need to consider both  $\pm\sqrt{16}$ .

$$x - 15 = -4$$

or

$$x - 15 = 4$$

$$x = -19$$

or

$$x = -11$$

#### Question 1

By completing the square, find both solutions to the given equation:

$$x^2 - 38x = 215$$

#### Question 2

By completing the square, find both solutions to the given equation:

$$x^2 + 36x = 1792$$

**Question 3**

By completing the square, find both solutions to the given equation:

$$x^2 - 34x = 1475$$

**Question 4**

By completing the square, find both solutions to the given equation:

$$x^2 + 32x = -247$$

**Question 5**

By completing the square, find both solutions to the given equation:

$$x^2 - 10x = 144$$

**Question 6**

By completing the square, find both solutions to the given equation:

$$x^2 + 50x = 336$$